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Marlene F. Rayner-Canham and Geoffrey W. Rayner-Canham
Harriet Brooks: Pioneer Nuclear Scientist, Montreal: McGill-Queen's University Press, 1992). xx + 168 pp., illus., index. $29.95.

Harriet Pitcher (*née* Brooks) belonged to the "classical" generation of university-trained women, as defined by sociologist Marianne Weber.[1] Brooks entered McGill University in 1894 at age eighteen,

a time when talented women flooded into institutions of higher learning. Her contemporaries in exact sciences at St Petersburg, Copenhagen, Leiden, Utrecht, Göttingen, Zurich, and Paris include Tatyana Alexeyevna Ehrenfest-Afanassejewa, Margrete Bose y Heiberg, Grace Chisholm Young, Tettje Clay-Jolles, Agathe van der Plaats-Keyzer, Mileva Einstein-Maric, and Marie Curie-Sklodowska. Like some of them, Brooks travelled widely to study and teach physics.

The Rayner-Canhams' account focuses on Mrs Pitcher when she was Miss Brooks (the Rayner-Canhams' use of "Brooks" notwithstanding, there is no evidence that she used her maiden name in any form after marriage in 1907). Upon breaking into print and obtaining an M.A. under Ernest Rutherford, she went for additional study to Bryn Mawr (she acknowledged one professor there, mathematician Charlotte Scott, as an accomplished researcher). She quickly obtained a fellowship enabling her to spend a year at Cambridge with Joseph John Thomson. The Cambridge experience, where she saw the irrelevance of advanced degrees in the British context, soured her on completing a doctorate at Bryn Mawr. She returned home to Montreal, where she became non-resident tutor at McGill's women's college and worked with Rutherford, producing another scientific paper. Then she moved up to a position as physics tutor at Barnard College in New York; for two years she abandoned research for teaching, leaving after an unhappy love affair. She summered in the Adirondacks with Fabian socialist friends, who introduced her to Maxim Gorky. Brooks followed her idealists to Europe, where she joined Gorky's entourage and worked under physicist André Debierne in Paris. Rutherford arranged for her to receive a fellowship at Manchester in 1907, but Brooks decided to marry Frank Pitcher, a prominent engineer, and begin a life of bourgeois ease in Montreal.

The Rayner-Canhams project Pitcher-Brooks as an unsung heroine of science, turned away from her calling by provinciality and social convention. I find this interpretation uncompelling. Brooks received first-rate physics training in Montreal when McGill was one of the world's leading scientific universities and when the city benefitted from a dynamic, expanding economy – the origin of her husband's material success. Every door opened at her knock (doors did not open as readily for several of her contemporaries cited earlier). In her studies and travel she would have seen many posts occupied by women academics. Following her marriage Brooks might have continued research (McGill physicist Arthur Stewart

Eve was her brother-in-law), but she preferred conventional pleasures. (Following the pattern for her class, she probably practised birth control - her three children were conceived between February 1910 and December 1912.) Brooks viewed physics as one of the civilizing experiences, like travel and literature. She had always been indifferent about publishing new results, and she found herself uninspired by the prospect of life in a laboratory. The misfortune here (if one can call it that) is her unawareness of contemporaries who combined motherhood, teaching, and physics research (p.88). The widowed Curie-Sklodowska (whom Brooks knew) raised her daughters and remained scientifically prominent. Ehrenfest-Afanassejewa, an exact contemporary of Brooks, raised a family and coauthored a major theoretical treatise on statistical mechanics. In 1912 the recently widowed Bose y Heiberg (possessing the equivalent of a doctorate from the University of Copenhagen and having carried out research under Walther Nernst at Göttingen) became a physics professor at the University of La Plata in Argentina; she raised a son, taught physics, and occasionally published into the 1940s. In the early years of the twentieth century, Clay-Jolles studied low-temperature physics under Heike Kamerlingh-Onnes at Leiden; she raised three children, and continued research and teaching in the Netherlands and at the Bandung Institute of Technology on Java.

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1 "Vom Typenwandel der studierenden Frau [1917]," in Marianne Weber, *Frauenfragen und Frauengedanken: Gesammelte Aufsätze* (Tübingen, 1919), pp. 179-201.